APPLICATION FOR 2005-2007 NOAA COASTAL SERVICES CENTER
COASTAL MANAGEMENT FELLOWSHIP

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF LONG ISLAND SOUND PROGRAMS

VISUAL IMPACT / VISUAL ASSESSMENT: DEVELOPMENT AND IMPLEMENTATION OF A MANAGEMENT METHODOLOGY

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BACKGROUND/INTRODUCTION

Connecticut's coastal management program, administered through the Office of Long Island Sound Programs (OLISP) of the Department of Environmental Protection (DEP), seeks a Coastal Management Fellow to develop a methodology to assess the visual impact of coastal development proposals. The Visual Impact/Visual Assessment (VIVA) project will capitalize upon increasing interest in landscape protection and a growing awareness of the role of visual quality in maintaining community identity and the quality of life along Connecticut's coast.

There is widespread and continuing interest among coastal managers and the general public in landscape protection and visual impact assessment. OCRM has demonstrated its interest in this topic by focusing on it as a component of its docks and piers research program and workshops (http://coastalscience.noaa.gov/documents/dockpier.pdf); the Maine DEP has recently adopted regulations on visual resource management for its coastal permitting program (http://www.maine.gov/dep/blwq/315draft.pdf), and the March 2004 Massachusetts Oceans Management Task Force called for development of "Methodologies and standards for the analysis of visual, cultural, and aesthetic impacts of proposed projects in state waters."

The protection of scenic landscapes from adverse visual impacts has therefore been recognized as a legitimate policy issue, and it has long been a subject of academic inquiry (see, e.g. http://www.esf.edu/es/via/). Moreover, visual resource protection even enjoys a statutory basis in Connecticut: our Coastal Management Act (CMA), the state legislation upon which the coastal management program is based, contains a general statement 22a-91(5) that the coast is rich in "aesthetic resources", and 22a-93(15)(F) defines as an "adverse impacts on coastal resources" the "degrading visual quality through significant alteration of the natural features of vistas and view points." However, the application of the "vistas and view points" policy and visual impact analysis in general on a day-to-day basis in coastal planning and regulation has proven to be problematic.

Coastal managers, the regulated community, and the public lack a common vocabulary and set of concepts to be able to assess or even talk about the visual effects of development on a landscape, or why protecting a landscape matters. Critics of a development proposal often strain to find an "objective" environmental rationale that seems more credible than their real objections--that they are uncomfortable with the way something looks and apprehensive of its effect on their quality of life. On the other hand, applicants may decry the subjectivity of "aesthetic" considerations, which are in the eye of the beholder, and point out that NIMBY interests often don't want newcomers to benefit from the views and amenities that they already enjoy.

Both sides are right to some extent, but both are also missing the point. Assessing visual impacts to landscape resources is not a matter of aesthetics, of pursuing some individual or group idea of what is attractive and beautiful. The visual qualities of a coastal landscape are coastal resources just as much as tidal wetlands or shellfish beds are, and impacts to the landscape can affect a community's identity,

quality of life, and sense of place, which are traditionally valid justifications for land use regulation. Moreover, visual qualities and impacts can be identified without regard to individual aesthetic preferences. Take, for instance, the quaint working waterfront of Noank harbor and the undisturbed marshes backed by wooded hills of Selden Cove: both are distinctive and their visual elements can be described, and the effects of proposed development on those elements evaluated, whether or not anyone thinks either site is more or less beautiful to look at.

While visual impact assessment and landscape protection may be well-established in theory, they are somewhat rare in practice. In Connecticut at least, regulators at the state and local levels tend to have difficulty interpreting and implementing even the existing CMA standards in specific cases. As skyrocketing real estate values drive more intensive coastal development, Connecticut's coastal management program needs to learn the language to talk about visual impacts and to develop and use the tools necessary to manage the coastal landscape. We recognize that this is a tall order, but without the opportunity provided by a CSC Fellowship, it is unlikely that OLISP could devote the staff resources necessary to undertake new work of this magnitude. Thus, we are seeking the VIVA Fellowship not just to conduct a research project or do program outreach, but to offer an opportunity to shape coastal management policy on a cutting-edge issue of national importance.

GOALS AND OBJECTIVES

In one sentence, the goal of the VIVA Fellowship is to develop and disseminate techniques to assess the visual impact of proposed development on the scenic resources and landscape qualities of Connecticut's coast. The VIVA Fellow will undertake a project to meet the following objectives:

(1) Research and assess the theory and practice of visual impact assessment, reviewing the experiences of other states and agencies, including the Smardon formulation used by the Maine DEP regulations.

(2) Develop a toolbox of assessment techniques, including GIS and other computerized methods.

(3) Define the landscape resources to be protected, both by identifying sites and by delineating the visual features of a landscape that should be protected, using electronic and other datasets as appropriate.

(4) Develop a visual impact assessment methodology, including as appropriate a GIS-based program and/or checklists and worksheets, which can be used by OLISP permit staff and municipal land use agencies to implement CMA visual resource policies.

(5) Test the visual impact assessment methodology on previous and pending permit and coastal site plan applications. Once the methodology is refined, train OLISP permit staff in its use and test it with the Connecticut River Gateway standards (described below).

(6) Present the methodology through workshops and PowerPoints to municipal commissions and staff, starting with the Connecticut River Gateway area. Prepare guidance documents and other outreach materials for permit applicants and the public on how the methodology can be used for landscape management. As appropriate, suggest model ordinances to address local needs.

MILESTONES AND OUTCOMES

The VIVA Fellowship will not have a strict timetable or sequence; we expect that many stages in the project will overlap. It is ambitious, but even preliminary stages will be useful in providing guidance where there is none at present.

August 2005-December 2005: Research the state of the art in visual impact assessment, compile and review the existing research, techniques, and methodologies that can serve as a starting point for assembling a Connecticut toolbox of techniques; become familiar with Connecticut regulatory processes and landscape management issues.

January 2006-May 2006: Review GIS resources and obtain the necessary software and training to meet the project's needs. Define visual features and landscape resources to be protected.

June 2006-December 2006: Develop a GIS-based program and/or checklists and worksheets, or other method to operationalize visual impact assessment for OLISP permit staff, for municipal commissions and staff, and ultimately permit applicants and the general public.

January 2007-July 2007: Test the methodology and train OLISP permit staff; conduct workshops with Gateway stakeholders and municipal commissions and staff; prepare guidance documents and make suggestions as to potential model ordinances and next steps.

PROJECT DESCRIPTION

The VIVA project is based on the premise that landscape values are not a matter of subjective aesthetic taste, but are components of a community identity and sense of place that can be defined, managed and protected. In starting from the basics and moving to a working regulatory assessment methodology, the project draws an ambitious scope, but even the preliminary stages will be valuable to Connecticut's coastal management program and, we believe, to the Fellow. The project will start with a systematic review of the research and state of the art in visual impact analysis, and of the visual management methods used in other states. As this toolbox is being assembled, the Fellow will become familiar with the Connecticut context: our coastal landscape, with its natural and man-made visual features, its values, and its problems; and the legal, administrative and political background against which OLISP manages the landscape resource. While we expect the Fellow to apply his or her academic perspective and training, this learning process will also be hands-on and in the field as well.

The next phase of the project will include two complementary tasks—the selection of appropriate methods for visual impact analysis, and the specification of the particular landscape elements and visual resources to be protected and managed, both specified for the Connecticut context. For specific tools to assess landscape criteria, we are particularly interested in the skills a recent graduate student might bring in applying GIS and other computerized spatial analysis or modeling, applications with which we have little experience. However, any visual impact assessment methodology must ultimately be user-friendly enough for OLISP permit staff to implement and transferable enough for OLISP coastal planning staff to train municipal and regional agencies in its use; thus, a low-tech checklist or worksheet could prove to be more suitable, at least as a first step. In any case, the visual analysis methodology must be developed by the Fellow to apply to the specific landscape elements that would need to be considered by Connecticut's state or local coastal managers—elements with relatively small frames of reference such as individual coves and inlets rather than sweeping vistas of barrier islands and dunes. Connecticut's shore is long-settled and densely developed; thus characteristic view points would also include well-known cultural features such as lighthouses, harbors, and bridges. The VIVA Fellow would work within this context to identify important scenic resources on a site-specific basis as well as to describe the landscape qualities that define the sense of place in different regions of Connecticut's shore.

One such region is the lower Connecticut River area, home of a unique regional land use agency, the Connecticut River Gateway Commission. A 1960's-era controversy over a proposed National Recreational Area highlighted the need to preserve the unique scenic values of the Connecticut River, particularly the "Gateway" area near the river's mouth. In response, the Connecticut legislature created the Connecticut River Gateway Commission, established in 1974 with the charge to prevent "deterioration of the natural and traditional river way scene for the enjoyment of present and future generations of Connecticut citizens."[1] Comprised of representatives from the towns of Haddam, East Haddam, Chester,

1 The Gateway Commission statutes can be found at Chapter 477a of the Connecticut General Statutes, http://www.cga.state.ct.us/2003/pub/Chap477a.htm. For additional information, contact the Commission's staff at

Deep River, Lyme Essex, Old Saybrook and Old Lyme, the MidState and Connecticut River Estuary Regional Planning Agencies, and the DEP, the Commission's major responsibilities are to oversee conservation land acquisition and to set protective zoning and land use standards within the Gateway Conservation Zone, which runs from ridgeline to ridgeline in the eight towns, encompassing some 30,000 acres. The Commission adopted initial minimum land use standards in 1974 for such criteria as building height limits, lot coverage and setbacks from the River, which were in turn adopted by the Gateway towns.

Today, the lower Connecticut River is both a prominent success and a threatened resource. The area has received well-deserved recognition under the Ramsar Convention as a Wetland of International Importance and as one of The Nature Conservancy's Last Great Places, but its increasing popularity for boating, birdwatching and other recreational uses, and for highly visible "trophy homes" has led many area residents to question whether incompatible development would forever change the Gateway's scenic character. Spurred by public input received during a series of River Roundtables in 2002, the Gateway Commission took up the challenge of managing the area's future development and substantially revised its land use standards for the first time in almost 30 years.

Adopted on February 26, 2004, the new standards attempt to reduce their visual and environmental impact of new structures on the River's landscape. New provisions include a 100-foot setback from the river for new structures (increased from 50 feet), a 50-foot vegetated buffer, new provisions for calculating height limits from the original grade, and a special permit review for new houses over 4,000 square feet that will require minimal disturbance and context-sensitive design. The revised standards are now in the process of being adopted by the individual Gateway towns, and the Commission's staff are conducting ongoing efforts to explain the standards and assist with their implementation. The VIVA Fellow will participate as appropriate in these efforts, both to understand landscape protection issues and to ground-truth the results of the Fellowship project.

The centerpiece of the Fellowship will be the actual development of a visual impact assessment methodology to suit Connecticut's natural, cultural, visual and legal landscape. Based on the Fellow's research and analysis, it is likely that a good starting point for developing a visual impact methodology should utilize the three-part impact analysis formula developed by Professor Richard Smardon, which applies criteria of landscape compatibility, scale contrast, and spatial dominance to evaluate coastal development, and which was adopted as the basis for the Maine DEP Chapter 315 regulations on Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses. The Maine regulations use a checklist and worksheets, but the Fellow is encouraged to develop a GIS-based program or other computerized method to operationalize visual impact assessment for Connecticut's coast. In any case, the methodology must be relatively simple and understandable, produce consistent and legally defensible results, and be readily applied by OLISP permit staff, municipal land use officials, and ultimately permit applicants and the general public. We are interested in a visual impact assessment process that can and

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the Connecticut River Estuary Regional Planning Agency, (860) 388-3497, or http://www.connecticutrivergateway.org.

will be used in the daily give-and-take of coastal development regulation at the state and municipal level, not in an academic exercise.

The final phase of the VIVA Fellowship will comprise testing, implementation, and outreach. The Fellow will try out the newly-developed visual impact assessment methodology on previous permit and coastal site plan applications that have proven controversial, make any necessary adjustments, and refine the methodology prospectively on pending applications in cooperation with OLISP permit staff. Once the methodology has been refined, the Fellow will develop a training program for its use and test its application to the Connecticut River Gateway standards. The Gateway area will be the starting point for the Fellow's presentation of the methodology through workshops and PowerPoints to municipal commissions and staff. Based on the initial outreach efforts, the Fellow will create guidance documents geared to OLISP staff, municipal officials, permit applicants, and the general public that will provide sufficient documentation and information to allow the visual impact assessment process to be carried on long after the end of the Fellowship. As a final coda, the Fellow will draw upon his or her experience with the project to suggest potential modifications to legal authorities, such as model municipal ordinances or alterations to CMA policies or Gateway standards, which might provide a stronger legal basis to manage Connecticut's landscape resources.

VIVA Fellow Mentoring

Connecticut's coastal management program is interdisciplinary, comprehensive and not "networked." Accordingly, OLISP's mentoring approach is to fully integrate the VIVA Fellow into the entire range of OLISP responsibilities, including elements such as permit application reviews, state and federal consistency with the CMA, coastal permitting and enforcement, coastal research, and habitat restoration, in order to provide the Fellow with a broad range of working experience. To this end, the VIVA Fellow will attend a variety of meetings both internal and external, including Gateway Commission meetings, municipal planning and zoning meetings, and pre-application meetings with applicants, as well as field trips, workshops and conferences. In particular, we expect that the Fellow will be assigned primary responsibility for processing some permit applications and reviewing coastal site plan applications that raise visual impact issues.

The VIVA Fellow will be housed within OLISP's Coastal Planning section, which has responsibility for municipal liaison, coordination, and commenting on local plans and coastal site plan reviews regarding consistency with the CMA. David Blatt, supervisor of the Coastal Planning section, will serve as the VIVA Fellow's primary mentor and contact. David, a professional planner with additional legal experience, has been with OLISP for over 17 years and serves as the DEP representative on the Gateway Commission. A long time ago he wrote his Master's paper on visual resource management and has retained an interest in the subject ever since.

However, the Fellow will also work closely with the Permitting and Enforcement section, which has responsibility to regulate all work in the tidal, coastal and navigable waters of the state and in tidal wetlands. Their regulatory experience will be a necessary ingredient in developing a visual impact assessment methodology, and they will be among the primary end-users of the products of the Fellowship.

Within the Technical Services section, the Fellow will work with GIS specialists (particularly former CSC Fellow Kevin O'Brien) who will provide on-going technical support and training in the use of ArcView and the development of the various databases. Up to three sets of recent elevation data (including contour lines and LIDAR points) are expected to become available shortly and could serve as the basis of a 3-D GIS model. As necessary, additional GIS training opportunities will be available in-house and in local educational institutions. As needed, these specialists will assist in complicated aspects of creating a customized GIS interface.

Finally, in order to assist the Fellow in developing a working knowledge of Connecticut's coastal management program, after an appropriate amount of general training throughout the Office, the Fellow will be added to OLISP's "du jour" rotation. Once a month, each staff person is assigned "du jour" duty, and that person receives and responds to information requests (primarily telephone calls) of a general programmatic nature. As needed, the "du jour" person will seek the assistance of other program specialists to help respond to the more challenging questions, which has proved to be an effective way for staff to become familiar with all aspects of OLISP's coastal management programs.

PROJECT PARTNERS

In addition to the Fellow's involvement with ongoing OLISP activities, the VIVA Fellowship offers attractive mentoring and collaboration opportunities in partnering with the Gateway Commission. The Fellow will be introduced to the Gateway Commission and staff early on in the project, and will continue to exchange information and advice on visual impact assessment throughout the Fellowship. In particular, the Fellow will take part in development of outreach materials and workshops to teach towns how to conduct visual impact analyses in the context of a Gateway special permit review. Finally, it is worth noting that the Gateway Commission is staffed by the Connecticut River Estuary Regional Planning Agency, recipient of the 2001 The Walter B. Jones Memorial and NOAA Excellence Awards in Coastal and Ocean Resource Management for Excellence in Local Government.

COST SHARE DESCRIPTION

For the duration of the Fellowship, DEP will provide the VIVA Fellow with a workstation equipped with a telephone and voice mail system, filing space, office supplies, and desktop PC. The VIVA Fellow will have access to a high-end PC supporting GIS development and 3-D visualization, and the 3-D Analyst extension to ESRI ArcGIS software. The computer will be equipped with software required to conduct the proposed work tasks as well as standard office software such as Word, Excel,

Access, and PowerPoint, and high-speed Internet access. The Fellow will also have access to clerical support, fax and mail services, and will be provided with transportation costs for project-related travel. In addition, the Department will commit to providing $15,000 ($7,500 each year) in required matching funds from state general funds or state permit application fee funds, as appropriate. Details for this arrangement will be worked out with the CSC.